

**AIR OPERATIONS AREA  
CONSTRUCTION  
RULES**

**SAMPLE GUIDE**

This document serves as a guide to assist airport operators in preparing an AOA Construction Rules Document for their own airport. This guide is not intended to serve as FAA policy

# CHAPTER 1

## DEFINITIONS

**AIR OPERATIONS AREA (AOA):** The portion of Airport which encompasses the landing, take off, taxiing and parking areas for aircraft.

**AIRPORT CONSTRUCTION:** Work that is performed within the Air Operations Area.

**AIRSPACING:** Aeronautical studies of obstructions to air navigation, performed by the FAA, to determine their effect on the safe and efficient use of airspace.

**APRON (RAMP):** An area of pavement used for the servicing, loading, unloading and parking of aircraft.

**CONSTRUCTION AREA:** The area approved by the Director of Aviation to designate the limits of construction and equipment/material storage areas required for the Contractor's exclusive use during construction.

**CONTRACTOR:** A person, partnership, firm, corporation, association, organization, or any combination thereof, entering into a contract with the Owner for the execution of work on the airport, acting directly or through a duly authorized representative.

**CONTROL TOWER:** Refers to the FAA owned and operated tower, located on the Airport, used to direct the movement in the air within the vicinity of the airport and on the ground within the Movement Area and associated safety areas.

**CRITICAL AREA:** Refers to a specified area around a NAVAID (electronic or visual), which is to be free of all objects, vehicles or equipment unless authorized by the FAA Control Tower and the Director of Aviation. Entering this area without authorization represents a safety hazard to airborne aircraft.

**DIRECTOR OF AVIATION:** Refers to the Director of the Department of Aviation for the Airport and/or designated representative(s).

**EQUIPMENT:** Any item or unit used by a Contractor which does not meet the definition for vehicles or supplies, and is not incorporated into the finished construction.

**ESCORT:** A person(s) responsible for controlling the movements of individual(s), vehicles and/or equipment within the AOA. The individual(s) that provide the escort must meet the requirements outlined within this document.

**FEDERAL AVIATION ADMINISTRATION (FAA):** The government organization that governs the safe and efficient use of the nation's airspace, by military as well as civilian aviation, and promotes civil aeronautics and commercial aviation.

**FOREIGN OBJECT DEBRIS/DAMAGE (FOD):** The term used to refer to any object(s) (discarded waste, rock fragments, etc.) on the airport. These objects have the potential of causing damage to aircraft.

**FRANGIBLE BASE:** A base designed to be easily broken at a specified impact load. These bases are attached to all objects, including signs and lights, located within all safety and object free areas.

**HAUL ROUTE:** A specific route designated for the purpose of conveyance by vehicles from one point within the AOA to another.

**HAZARDOUS AREAS:** Areas in which no part of an aircraft is permitted. These areas are indicated by the use of barricades as specified within this document and detailed in Appendix A.

**MOVEMENT AREA:** A portion of the Air Operations Area consisting of runways, taxiways and other areas of an airport which are used for the movement of aircraft excluding aprons.

**NAVIGATION AID (NAVAID):** Any visual or electronic device, airborne or on the surface, that provides point-to-point guidance information or position to aircraft in flight.

**NIGHTTIME:** The period of time from one (1) hour prior to local official sunset to one (1) hour after local official sunrise.

**OBJECT:** Includes, but is not limited to, above ground structures, NAVAIDS, people, equipment, vehicles, natural growth, terrain and parked aircraft.

**OBJECT FREE AREA (OFA):** An area free of all fixed objects except FAA approved equipment with frangible bases. This area shall be clear of vehicles/equipment as well as parked, holding or taxiing aircraft.

**RUNWAY:** A defined rectangular surface on an airport prepared or suitable for landing or takeoff of airplanes.

**SAFETY AREAS:** A designated area abutting the edges of runways or taxiways intended to reduce the risk of damage to an aircraft inadvertently leaving the runway or taxiway.

**SAFETY REPRESENTATIVE:** A person assigned by the Contractor, meeting the requirements of Chapter 4 of this document, to be responsible for personnel, vehicles and equipment on the Movement Area and the associated safety areas.

**SUPPLIES**: Materials or provisions stored for use during the construction project.

**TAXILANE**: The portion of the aircraft parking area used for access between taxiways and aircraft parking positions.

**TAXIWAY**: A defined path established for the taxiing of aircraft from one part of the airport to another.

**VEHICLE**: Any motorized, self-propelled, street legal, driver operated unit meeting State inspection requirements.

## **CHAPTER 2**

### **VEHICLE OPERATION ON THE AOA**

#### **A. Authorization of vehicles/equipment**

All vehicles that enter the Air Operations Area shall comply with the following:

1. All vehicles shall be limited to the airport perimeter road, paved leasehold areas and/or construction areas unless specifically authorized by the Director of Aviation or designee.
2. All construction vehicles/mechanized equipment authorized within the Movement Area or related safety areas shall be marked with a 3' x 3' orange and white checkered flag with each box being 1' square, located on the uppermost portion of the vehicle/motorized equipment, or be escorted by a vehicle so equipped.
3. All vehicles authorized to operate on the Movement Area or associated safety areas are required to maintain 2-way communication with the Control Tower or be under the escort of an Airport Representative.
4. During nighttime hours, all equipment operating on the airport exceeding 15 feet in height shall be lit with a red obstruction light in accordance with Advisory Circular 70/7460-1. This light is to be located on the uppermost portion of the equipment.
5. All construction equipment that exceeds 20 feet in height are required to be "Airsaced." This procedure will be outlined in Section A of Chapter 5.

#### **B. Vehicle/Equipment Restrictions**

1. Bicycles, motorcycles and two-wheeled scooters are prohibited on the AOA.
2. All vehicle(s)/equipment must be appropriately secured such that neither aircraft blast nor wind will result in their movement.

#### **C. Right of Way**

Vehicle(s)/equipment shall be operated in a manner that does not interfere with aircraft operations. All vehicle(s)/equipment shall yield right of way to all aircraft and emergency vehicles.

**D. Vehicle/Equipment Operating Rules**

The Contractor shall be responsible for ensuring compliance with the following rules by all individuals authorized to drive outside the construction area:

1. Vehicle/mechanized equipment operators shall obey all traffic signs.
2. The established speed limits within the AOA are:
  - a. Airport Perimeter Road - 20 m.p.h.
  - b. Ramp and Terminal Areas - 15 m.p.h.
3. At no time shall the operator of a vehicle/mechanized equipment drive under any portion of an aircraft.
4. A vehicle/equipment shall not stop or be parked:
  - a. so as to block a driveway, AOA access gate, firelane or aircraft;
  - b. in areas other than those prearranged and approved by the Director of Aviation or designee;
  - c. within 15 feet of a fire hydrant, unless authorized by the Chesterfield Fire Protection District.
5. Vehicle(s)/mechanized equipment shall not be operated in a careless or negligent manner within the AOA.
6. Vehicle(s)/equipment shall not be operated by individuals under the influence of any substance which impairs the ability to do so in a safe manner.

**E. Night or Low Visibility Operation**

1. Vehicle/mechanized equipment operators are not permitted to move about the airport, outside the designated construction area, at night unless the vehicle has operating head lights, tail lights and brake lights, or is under the escort of a properly lighted vehicle. Head lights shall be set on DIM when moving about the airport at night.
2. Vehicles/mechanized equipment authorized on the Movement Area and/or associated safety areas shall be equipped with an electrically powered, amber color, 360-degree omni-direction light, mounted on the vehicle such that it is conspicuous from any direction.

**F. Runway/Taxiway Access**

1. At no time shall a vehicle enter the Movement Area and/or associated safety areas unless it is authorized by the Director of Aviation or his designee and is in continuous radio communication with the Control Tower. If a vehicle is not radio equipped to communicate with the Control Tower, an escort vehicle equipped with such a radio must lead or direct the movement of this vehicle while operating on the Movement Area.
2. Any individual authorized unescorted access to the Movement Area or associated safety areas must have completed the driver training program administered by the Assistant Director of Aviation.

**G. Vehicle/Equipment Accidents**

All accidents, which involve bodily injury or property damage must be reported immediately to the Office of the Director of Aviation.

**H. Removal of Vehicle(s)/Equipment**

The Airport may remove and impound, at the owner's expense, any vehicle/equipment which is disabled, abandoned, improperly parked, or represents an operational hazard.

**I. Insurance**

All vehicles authorized driving privileges on the Airport are required to maintain vehicle liability coverage as established by the contract.

## **CHAPTER 3**

### **USE OF SAFETY REPRESENTATIVES**

The Contractor shall provide an adequate number of Safety Representatives to serve as escorts for material deliveries along haul routes and the movements of the Contractor's vehicles/mechanized equipment and personnel within the Movement Area.

#### **A. Requirements for Safety Representative**

1. All questions relating to the use of Safety Representatives shall be directed to the Director of Aviation.
2. Safety Representatives shall be under the direct and exclusive supervision of the Contractor for the duration of the project.
3. At any time during the project, the Director of Aviation or his representative may reclassify one or all of the Safety Representatives as unacceptable and the Contractor must immediately remove this person(s) from those duties.
4. Safety Representatives shall be familiar with aircraft operations at the Airport.
5. Safety Representatives must:
  - a. Pass a written examination administered by the Airport Administration office, study materials will be provided.
  - b. Demonstrate to the Director of Aviation or his designee, in a vehicle provided by the Contractor with appropriate equipment, their ability to move about the airport in a safe manner.

#### **B. Vehicle(s)/Equipment**

1. If the Contractor's project involves access to the Movement Area and/or associated safety areas, the Contractor shall furnish appropriate escort vehicle(s) for use by the Safety Representative. The Safety Representative shall have a capability of 2-way radio communication with the Control Tower on a frequency of 121.## MHZ.
2. The Contractor shall identify all escort vehicles in accordance with Chapter 2 of this document.



**C. Duties of the Safety Representative**

1. The Safety Representative shall provide all escorts on the Movement Area and/or associated safety areas.
2. During any absence of the Safety Representative(s) or for periods that they are unable to perform their specified duties, all work within the Movement Area and associated safety areas shall stop. Additionally, all personnel and equipment shall be escorted to approved locations outside the Movement Area and related safety areas. **NO** contract time extension will be granted for time lost due to the absence of the Safety Representative(s). Work shall resume only with the return of the Safety Representative(s).
3. The Safety Representative shall ensure that all equipment maintains proper clearances from moving aircraft.

## **CHAPTER 4**

### **CONSTRUCTION**

#### **AIRPORT OPERATIONS SHALL TAKE PRECEDENCE OVER ALL WORK.**

When airfield construction is being performed on the AOA the following rules will apply unless modified in writing by the office of the Director of Aviation.

**A. Contact Telephone Number**

The Contractor will, for the duration of the project, provide a 24 hour telephone number which can be used to contact a representative with decision making authority in the event of an emergency or a hazardous situation.

**B. Airspacing Requirement**

1. Any airport construction and/or alteration requires the Contractor to complete and submit FAA Form 7460-1 Notice of Proposed Construction or Alteration (available from the FAA Air Traffic Division Regional Office), at least 30 days prior to the start of the project.
2. The Contractor shall complete and submit FAA Form 7460-1 for all equipment and/or temporary structures, utilized during any airport construction and/or alteration, that exceeds a height of 20 feet above ground level. This includes:
  - a. Cranes;
  - b. Derricks;
  - c. Stockpiles of materials or equipment;
  - d. Earth moving equipment.
3. A copy of all completed FAA Form 7460-1's and the FAA's determination(s) must be on file with the Department of Aviation prior to commencing the erection or construction of the item(s) proposed by the Contractor.

**C. Construction Area**

1. The Contractor shall erect and maintain fencing, barricades, signs and warning devices used to delineate the perimeter of all construction areas, as approved by the Director of Aviation or his designee.

**D. Escorts**

All escorts performed within the Movement Area and/or associated safety areas, must be provided by a Safety Representative (see Chapter 3 for detailed requirements).

**E. Access to the AOA**

1. The Assistant Director of Aviation shall designate all access points into the AOA.
2. All points of entry into the AOA, which are under the Contractor's control, shall be secured and/or guarded.
3. Deliveries are to be strictly controlled (by the Contractor) using personnel specifically acquainted with these rules. The Contractor shall provide properly manned escort vehicles as required to guide and escort all deliveries to the work area(s).

**F. Work Performed Outside the Approved Construction Area(s)**

1. All work outside an approved construction area must be submitted, in writing, 48 hours in advance, excluding weekends.
2. Unless otherwise specified by the Director of Aviation or Airport Engineer, all work outside an approved construction area must be marked in accordance with Appendix A.
3. All barricades, lighting and warning devices used to delineate any construction or hazardous area(s) are to be provided by the Contractor.
4. Protection of Safety, Object Free and other Restricted Areas
  - a. At **NO TIME** shall personnel, vehicles or equipment be located or enter any of the following areas unless authorized by the Assistant Director of Aviation or the Airport Engineer.
    - 1) Within 250 feet parallel of the centerline of a Runway 8R-26L or within 75 feet parallel of the centerline Runway 8L-26R.
    - 2) Within 1,000 feet of the end of a runway.
    - 3) Within 59 feet parallel of a taxiway centerline.
    - 4) NAVAID Critical Areas, detailed in Appendix B. Work within these areas of the AOA has the potential of causing interference with navigation aids.

- 5) On the Movement Area and/or associated safety areas during times of inclement weather or unusual events as determined by the Director of Aviation. During such times all work is to be suspended. All equipment shall be removed to approved staging areas.
- b. Trenches and/or Excavations  
  
Trenches and/or excavations shall not be allowed in the following areas without closure or restriction of the adjacent Movement Area:
  1. Within 250 feet parallel to a runway centerline.
  2. Within 59 feet parallel to a taxiway centerline.
  3. Within 1,000 feet of the end of a runway.
- c. Barricading/plating of trenches and/or excavations shall be in accordance with the requirements contained in Appendix A.

#### **5. Stockpiled Material(s)/Supplies**

- a. All stockpiled material(s)/supplies shall be constrained in a manner to prevent movement resulting from aircraft blast or wind conditions.
- b. Material(s)/supplies shall not be stored within 500 feet of aircraft turning areas or movement areas.
- c. Stockpiled material(s)/supplies shall not exceed 15 feet in height unless the Contractor has complied with all requirements for airspacing and secured approval from the Airport Engineer.
- d. All material(s)/supplies shall be positioned so it will not obstruct the line of sight from the Control Tower Cab to the Movement Area.
- e. Marking and lighting shall be in accordance with the requirements contained in Appendix A.

#### **6. Haul Routes**

- a. Location of haul routes on the airport site shall be approved by the Assistant Director of Aviation or the Airport Engineer.
- b. All haul routes on the airport shall be marked, when necessary, and maintained by the Contractor. These routes shall be restored to their original condition upon completion of the construction project.

- c. Markings, if required, shall be provided by the Contractor, in accordance with specifications established by the Assistant Director of Aviation or Airport Engineer.

## **7. Equipment Limitations**

- a. Construction equipment shall not be permitted to operate upon paved areas unless the equipment has pneumatic tires or special means, approved by the Airport Engineer, have been provided to protect the pavement.
- b. Construction equipment shall not exceed a height of 20 feet above the airport surface without approval by the Assistant Director or Airport Engineer.
- c. All construction involving cranes must be coordinated at least 48 hours in advance, excluding weekends, with the Assistant Director of Aviation. This does not include the time required for airspacing. The following information is required:
  - 1) Location of crane.
  - 2) Maximum extendable height.
  - 3) Hours of operation.
- d. The top of each crane boom must be marked by a 3' x 3' orange and white checkered flag — each box being 1' square.
- e. Each crane must be lowered at night and during periods of poor visibility as directed by the Assistant Director of Aviation or Airport Engineer. In the event the crane is approved to remain extended during the hours from sunset to sunrise, the highest point of the crane boom will be lit with a red obstruction light in accordance with AC 70/7460-1.

## **8. Nighttime Construction**

- a. Nighttime work, not covered by plans and specifications, requires 48 hours advanced approval, excluding weekends, by the Assistant Director of Aviation.
- b. Lighting for nighttime work must be positioned so as not to hinder the vision of the air traffic controllers in the control Tower or the pilots of moving aircraft.

## **9. Dust and Debris Control**

- a. Debris, waste, and loose materials shall not be allowed on the Movement Area.

- b. If debris and/or loose materials are observed to be on active portions of the Movement Area, the Contractor will be responsible for correcting the discrepancy immediately.
- c. At the direction of the Assistant Director of Aviation, debris problems occurring during construction, NOT corrected by the Contractor in a timely manner, will be corrected by the Airport at the Contractor's expense.
- d. The Contractor is responsible for controlling dust problems, as defined by the Assistant Director of Aviation or Airport Engineer, resulting from construction and clean up processes.

#### **10. Inspection of Daily Work Outside the Designated Construction Area**

- a. Prior to opening any runway, taxiway, apron or associated safety area, that has been closed for construction, the Contractor shall arrange for an inspection by the Assistant Director of Aviation or his designee.
- b. The Assistant Director of Aviation shall, prior to the release of work crews, inspect all areas to ensure that:
  - 1) Paved areas are free of surface variations in accordance with FAR Part 139.
  - 2) All unpaved safety areas are cleared and graded and have no potentially hazardous ruts, humps, depressions or other surface variations.
  - 3) All trenches or excavations within active runway and/or taxiway safety areas are backfilled to support the weight of an aircraft or Aircraft Rescue and Fire Fighting (ARFF) equipment.
  - 4) If the trenches, excavations or hazardous areas have been authorized to remain in place, they are to be adequately plated and marked and lighted in accordance with Appendix A.
- c. All barricades used by the Contractor to designate an unusable or hazardous area on the AOA, shall be secured in place against movement or jet blast. See Appendix A for details.
- d. The Contractor shall ensure that all barricades and hazard lighting are operational prior to departing the construction area at the end of each workday.

## **CHAPTER 5**

### **ENFORCEMENT**

At the discretion of the Director of Aviation, violations of these Rules, depending upon the nature and severity, may result in:

1. A verbal and/or written warning.
2. The removal from the AOA of the individual(s), vehicle(s) and/or equipment that is (area) in violation.
3. Cessation of contract work until corrective measures are taken.
4. A determination that the Contractor is in default of the contract. All contract work will cease at this time.

## **APPENDIX A**

### **BARRICADE DETAILS**

#### **CLASS A**

12" X 12" TIMBER OR EQUIVALENT (MIN. 8' LONG) WITH LIGHTS - 18" MAX. HEIGHT:

- 12" HIGH BOARD
- SHALL NOT WEIGH LESS THAN 300 LBS.
- SOME APPLICATIONS MAY REQUIRE STEADY-BURN REDLENSES AS DIRECTED BY AIRPORT OPERATIONS
- MAXIMUM SPACING BETWEEN WARNING LIGHTS ON ADJACENT BARRICADES SHALL BE 7' UNLESS OTHERWISE SPECIFIED
- 4" DOME LIGHT SHALL MEET THE FOLLOWING REQUIREMENTS:
  - 12v - 300 MZ
  - 65 FLASHES PER MINUTE
  - 150 CANDELLAS

#### **CLASS B**

8" X 8" (NOMINAL TIMBER OR EQUIVALENT (MIN. 8' LONG) WITH LIGHTS - 17" MAX. HEIGHT

- 8" HIGH BOARD
- SHALL NOT WEIGH LESS THAN 200 LBS.
- SOME APPLICATIONS MAY REQUIRE STEADY-BURN AREDED LENSES AS DIRECTED BY AIRPORT OPERATIONS
- MAXIMUM SPACING BETWEEN LIGHTS ON ADJACENT BARRICADES SHALL BE 6' UNLESS OTHERWISE SPECIFIED

#### **CLASS C**

4" X 4" TIMBER OR EQUIVALENT (MIN. 8' LONG) WITH LIGHTS - 17" MAX. HEIGHT:

- 8" HIGH BOARD, BOTH SIDES WITH LIGHT AND STRIPES
- SHALL NOT WEIGH LESS THAN 90 LBS.
- MAXIMUM SPACING BETWEEN LIGHTS ON ADJACENT BARRICADES SHALL BE 6' UNLESS OTHERWISE SPECIFIED

**NOTE:** Any changes from the above requirements must be approved by the Director of Aviation.



## **CONE DETAIL**

### **CLASS D**

#### **CONES WITH REFLECTORIZED SLEEVE**

- MINIMUM WEIGHT - 10 LBS.
- 28" MAX. HEIGHT WITH OR WITHOUT LIGHT
- CONE LIGHT (WHERE REQUIRED) SHALL PROVIDE A MINIMUM OF 65 FLASHES/MINUTE
- MAXIMUM SPACING OF CONES SHALL BE 5' UNLESS OTHERWISE SPECIFIED

**NOTE:** Any changes from the above requirements must be approved by the Director of Aviation.

## **PLATES**

The use of plates on an airport construction project requires Department of Aviation approval. If plates are allowed, the following criteria will apply:

1. Plates shall be provided by the Contractor.
2. Plates shall be 3/4 to 1 inch in thickness, as required by traffic, of 60 KSI yield strength steel.
3. Plates shall have 45 degree beveled edges.
4. Plates shall be sized such that not more than 1/3 of the plate area covers a trench or excavation.
5. Plates shall not cover trenches or excavations that exceed 24 inches in width.
6. No more than 3 plates will be used on any one trench or excavation.
7. No more than 6 plates will be used on the project at any one time.
8. All plates shall be secured in such manner that movement does not occur during use by aircraft or vehicular traffic.

**NOTE:** Any changes from the above requirements must be approved by the Director of Aviation.

## **Appendix B**

### **NAVAID Critical Area**

- A. Localizer Critical Area (See Figure B-1)
  - a) Localizers are located at the ends of Runways 8-26
  - b) The Critical Area begins 50 feet behind (away from runway threshold) and extends to 2,000 feet beyond (toward the runway) the localizer
  - c) The Critical Area extends 200 feet either side of the runway centerline
- B. Glideslope Critical Area (See Figure B-1)
  - a) The Glideslopes are located near the ends of runways 8-26
  - b) The Critical Area begins at the antenna and extends to the runway threshold
  - c) The Critical Area extends from the antenna to the runway edge and from the antenna 200 feet away from the runway
- C. Visual NAVAID Critical Area
  - a) No object may be positioned as to block the view of any part of the following equipment:
    - Approach Lights System (ALS). These are located at the end of runways 8-26
    - Visual Approach Slope Indicators (VASI). These are located at the end of runways 8-26 and 3-21
  - b) No object may be positioned between the Runway Visual Range (RVR) equipment.

## **Figure B-1**

1. Localizer Critical Area

2. Glide Slope Critical Area